

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for assisting development of a program for a vehicle, ~~comprising:~~ wherein a vehicle control program is generated ~~a program-generation step of generating a vehicle control program~~ using a program generator having a function for generating a segment of vehicle-use code based on a data flowchart indicative of a control specification input[[;]], the method comprising:
generating a segment of vehicle-use code having integer logic to be processed by a vehicle ECU, the step of generating including
introducing an integer block into the data flowchart, and
inputting into the integer block an integer conversion condition for conversion from a floating point number to an integer; and
adjusting the integer conversion condition so that a difference between a floating point number input into the integer block and a floating point number obtained by back calculation from an integer obtained after conversion by the integer block using the integer conversion condition is within a predetermined tolerable range
~~a downloading step of downloading the generated vehicle control program to a vehicle ECU; and~~
~~a debug step of debugging the vehicle control program by causing the vehicle ECU to execute the vehicle control program.~~
2. (Currently Amended) A method for assisting development of a program for a vehicle according to claim 1 ± 20, wherein
said debugging at the debug step is carried out in the program generator which inspects a result of execution of the ~~vehicle control~~ program by the vehicle ECU.
3. (Currently Amended) A method for assisting development of a program for a vehicle according to claim 2, further comprising:
~~a control execution step of connecting the vehicle ECU to a vehicle model~~
device which models a vehicle to be controlled, to cause the vehicle ECU to control the vehicle model device; and

~~an inspecting step of inspecting the vehicle ECU and the vehicle model device~~
while control is applied.

4. (Currently Amended) A method for assisting development of a program for a vehicle according to claim 3, further comprising:

~~a model generation step of generating a vehicle model in the program~~
generator based on a vehicle specification input; and

~~a model download step of downloading the vehicle model generated at the~~
model generation step to the vehicle model device.

5.-8. (Cancelled).

9. (Currently Amended) A device for assisting development of a program for a vehicle ~~according to claim 8~~, further comprising:

a code generation function for generating, based on a data flowchart indicative
of a vehicle control specification, a segment of a vehicle-use code for a vehicle control
program having an integer logic to be processed by a vehicle ECU; and

a simulation function for outputting

a floating point number as a result of simulating the data flowchart
~~with application of using~~ a floating point number corresponding to a physical value, and
of an integer as a result of simulating the data flowchart using an
integer obtained by converting a the floating point number corresponding to the physical
value, to output results of simulations with floating point number applied thereto and of the
integer applied thereto, respectively.

10. (Currently Amended) A device for assisting development of a program for a vehicle according to claim 9, wherein a floating point number obtained by converting the
integer obtained as a result of simulation with application of the integer obtained by
converting the floating point number result of back calculation to obtain a floating point
number from a result of simulation with an integer applied thereto is displayed so that a
difference between a result of simulation with application of the floating point number
corresponding to the physical value and a result of simulation with application of the integer
obtained by converting the floating point number corresponding to the physical value results

~~of simulations with the floating point number applied thereto and of the integer applied thereto, respectively, can be determined.~~

11. (Currently Amended) A device for assisting development of a program for a vehicle according to claim 10, wherein the data flowchart has a block symbol which includes information concerning:

a floating point number corresponding to the physical value,
an integer conversion condition from a floating point number to an integer,
an integer obtained by converting the ~~conversion condition from a~~ floating point number corresponding to the physical value using the integer conversion condition to an integer, and
~~a result of back calculation to obtain an integer from a floating point number obtained as a result of simulation with application of the integer obtained by converting the floating point number using the integer conversion condition.~~

12. (Currently Amended) A device for assisting development of a program for a vehicle according to claim 11, wherein the integer conversion condition is ~~able to be~~ adjusted based on a result of the simulation.

13. (Currently Amended) A device for assisting development of a program for a vehicle according to any one of claims 8 9 to 12, further comprising:
a priority function for defining an order for executing a plurality of data flowcharts in a same hierarchy in the ~~sate~~ state flowchart.

14. (Currently Amended) A device for assisting development of a program for a vehicle ~~according to any one of claims 8 to 13, further~~ comprising:
a chart generation function for generating a data flowchart and a state flowchart indicative of a vehicle control specification;

a program code generation function for generating, based on the charts generated, a segment of a vehicle-use code for a vehicle control program having an integer logic to be processed by a vehicle ECU; and

a labeling function for assigning a desired label to a symbol connection line desirably selected in the data flowchart, wherein a vehicle-use code using the label as a variable name of a part with the label attached is generated.

15. (Currently Amended) A device for assisting development of a program for a vehicle ~~according to any one of claims 8 to 14, further comprising:~~

a chart generation function for generating a data flowchart and a state flowchart indicative of a vehicle control specification;

a program code generation function for generating, based on the charts generated, a segment of vehicle-use code for a vehicle control program having an integer logic to be processed by a vehicle ECU; and

a grouping function for grouping a plurality of processes corresponding to a plurality of block symbols in the data flowchart when the vehicle-use code is generated.

16. (Currently Amended) A device for assisting development of a program for a vehicle according to claim ~~15~~ 14, wherein grouping is applied according to a predetermined grouping restriction condition which defines a number of block symbols to be grouped.

17. (Currently Amended) A device for assisting development of a program for a vehicle according to claim ~~15 or 16~~ 14, further comprising:

a labeling function for assigning a desired label to a symbol connection line desirably selected in the data flowchart, wherein a part with the label attached thereto is set as a grouping segment.

18. (Currently Amended) A device for assisting development of a program for a vehicle according to ~~any one of claims 9 to 17~~ claim 14, wherein a segment of vehicle-use C code is generated by modifying, using the program code generation function, a segment of general C code to suit a vehicle ECU.

19. (Currently Amended) A computer readable memory medium for use in assisting development of a program for a vehicle, bearing a program to be installed on a program generator having a function for generating a segment of a vehicle-use code based on a data flowchart indicative of a control specification, the program causing a computer to execute[[,]]:

a function of generating, by introducing an integer block into the data flowchart and inputting into the integer block an integer conversion condition for conversion from a floating

point number to an integer, a segment of a vehicle-use code having an integer logic to be processed by a vehicle ECU; and

a function of adjusting the integer conversion condition so that a difference between a floating point number input into the integer block and a floating point number obtained by back calculation from an integer obtained after conversion by the integer block using the integer conversion condition is within a predetermined tolerable range

~~a chart generation function for generating a data flowchart and a state flowchart indicative of a vehicle control specification, and~~

~~a program code generation function for generating, based on the generated chart, a segment of vehicle-use code for a vehicle control program having an integer logic to be processed by a vehicle ECU.~~

20. (New) A method for assisting development of a program for a vehicle according to claim 1, further comprising:

downloading the generated program for a vehicle to a vehicle ECU; and

debugging the downloaded program by causing the vehicle ECU to execute the program.